REMARKS/ARGUMENTS

Claims 1-30 were presented and examined. The Examiner rejected claims 1-30 under 35 USC § 102(b), as being anticipated by Aggarwal *et al.* (U.S. Patent No. 5,924,116). In this response, Applicant has amended claims 1, 5, 6, and 11. Claims 1-30 remain pending.

Specification modification

Applicant has amended the specification as indicated to correct typographical or grammatical errors found in the specification as filed. These amendments are made for purposes of clarification only and are not made for any purpose related to patentability.

Claim rejections under 35 USC § 102(b)

The Examiner rejected claims 1-30 under 35 USC § 102(b), as being anticipated by Aggarwal *et al.* (U.S. Patent No. 5,924,116).

With respect to claims 1-10, Applicant has amended independent claim 1 to recite that the claimed method includes an initial element of determining whether a requested object is a static object. Because support for this amendment is found in the specification as filed the paragraph beginning on page 6 line 10, the amendment does not introduce new matter.

The cited reference does not disclose all of the elements of amended claim 1. Specifically, Aggarwal does not teach or disclose determining whether a requested object is a static object. Aggarwal does not differentiate between static objects and non-static objects because Aggarwal is directed at a method for indicating the cache status of an object, regardless of the type of object, on one or more proxy servers. Aggarwal teaches a method for determining in which proxy servers an object is currently cached and thereby achieve improved performance by, for example, retrieving an object from the hierarchically closest proxy server in which the object is currently cached. The Aggarwal method is indifferent to whether an object is static because it is only concerned with where an object is cached. Determining the closest server containing a cached copy of an object does not require or benefit from knowledge of the type of object.

Aggarwal, therefore, does not teach all of the limitations of claim 1 as amended. An anticipation rejection is appropriate only when all of the claim limitations are present in a single

reference. Because the cited reference does not teach all of the limitations of independent claim 1 as amended, an anticipation rejection of claim 1 as amended is improper. Accordingly, Applicant would request the Examiner to withdraw the Section 102(b) rejection of independent claim 1 and its dependent claims (claims 2-10).

With respect to claims 11-20, Applicant has amended independent claim 11 to recite explicitly that the form response generated when a response to a requested object (that misses in the cache) is created includes the header fields of the generated response. Support for this amendment is found in the specification, for example, at the paragraph beginning on page 8, line 24.

The cited reference does not teach all of the elements of independent claim 11 as amended herein. There is no teaching or suggestion in Aggarwal that its cached objects are objects that contain packet headers. The clear implication throughout Aggarwal, as is common to substantially all conventional and preexisting server caching mechanisms, is that the Aggarwal object cache contains objects only (i.e., the content only). This indication is readily apparent in the description of the auxiliary stack (element 125, FIG. 2A) of Aggarwal. The auxiliary stack is used in Aggarwal to store the cache hierarchy label (CHL). The CHL is the piece of data that enables Aggarwal to determine which servers contain cached copies of an object. Aggarwal describes the process of updating the CHL and then including the updated CHL as part of a packet to a requestor or to another server cache. Aggarwal states in part:

> in order to track the caching status, an auxiliary stack is maintained which contains the identity or URL of each object and its caching status, e.g., and the CHL value, on the higher level proxies. This auxiliary stack is preferably maintained in LRU order, and *since it only contains identities of objects rather than the objects themselves*, the memory required is relatively small if the number of objects in the auxiliary stack is of the same order as that in the main cache. Column 4, lines 12-1=20.

The significance of this excerpt is that Aggarwal clearly delineates the objects themselves from information used to create or modify packet headers when an object is served. The only packet header component Aggarwal discusses in any detail is the PICS header, which Aggarwal uses to convey CHL information. See, column 5 line 58 through column 7 line 7. It is clear from Aggarwal's description of FIG 2A and FIG 2B, however, that the CHL information is stored in

the auxiliary stack 125 and that the auxiliary stack 125 is distinct and separate from main cache 110, where objects are stored.

In contrast to the header-content distinction of Aggarwal, the form responses of the present invention are "packetized" or pre-formatted objects that include header fields as recited in amended claim 11.[1] As stated in the paragraph beginning on page 3, line 8, the invention stores static objects in the form of a one or more IP-compliant packet trains in memory or on disk. Upon subsequent access to a static object, the saved packet train may be retrieved from memory or from disk and the subsequent network processing merely requires updating of header information. Thus, by storing and reusing previously derived header information together with the objects themselves, the invention reduces the protocol processing associated with conventional techniques for serving objects (i.e., retrieving the object and serially appending the header fields required by the protocol(s) in use).

Because Aggarwal does not disclose a method in which header fields are stored together with cached objects as recited in amended claim 11, Applicant would respectfully request the Examiner to reconsider and withdraw the Section 102(b) rejection of amended claim 11 and its dependent claims (12-20).

With respect to claims 21-30, Applicant respectfully traverses the rejection of independent claim 21 because the cited reference does not disclose or otherwise contain all of the elements of independent claim. Specifically, claim 21 recites computer code means for determining whether a static object form response is available and computer code means for updating a header in the form response. Thus, the static object form response recited in claim 21 includes a header field. As discussed above with respect to claim 11, Aggarwal does not teach the inclusion of header fields in its stored cache objects. In rejecting the independent claims, the Examiner indicates that the claimed element is taught by Aggarwal at column 8, line 42 as follows:

> in step 410 the proxy checks if the requested object is in its local cache/buffer. If found in the local cache, in step 415, the CHL value *of the object to communicate down the hierarchy* is determined...In step 420, the CHL value is then inserted into the object header.

The italicized language makes it clear that the object into which the CHL value is inserted is the object that is to be sent down the search cache hierarchy and not the object that is retrieved from the local cache. Thus, according to Aggarwal, an object is retrieved from the local cache and prepared for communication down the hierarchy by appending a (PICS) header and inserting a CHL value into it. Aggarwal does not, therefore, teach the inclusion of header fields in its local cache, which is the closest analogy to the static object cache and the stored form responses of the present invention.

Because the cited reference does not teach all of the claim limitations, the Section 102(b) rejection of claim 21 is improper. Applicant would, therefore, respectfully request the Examiner to reconsider and withdraw the rejection of claim 21 and its dependent claims (22-30)

In addition to the foregoing, Applicant would respectfully traverse the rejections of claims 4, 14, and 24, all of which recite the insertion of blank header fields into a set of packets. The Examiner rejected these dependent claims relying on Aggarwal's description of generating a CHL value of 0 at column 11, line 25. Applicant submits that Aggarwal's DHL fields, even if they contain all 0's, are not blank fields. A blank field will be understood to refer to a field that conveys no information about the corresponding field. In, contrast, however, the DHL field of Aggarwal always conveys information about the cache status of the corresponding object. Specifically, as disclosed in Aggarwal, the DHL field is binary encoded data in which each bit in the field indicates the cache status of a corresponding object on one of the servers. Thus, when a DHL field of "000" for example, instead of conveying nothing such as a blank field would indicate, informs us that the corresponding object is not cached on any of three server caches. The Aggarwal method of conveying information in binary data is simply inconsistent with the concept of a blank field. Both 0's and 1's are informative in a binary field such as the DHL field of Aggarwal. Accordingly, the cited reference does not disclose all of the limitations of claims 4, 14, and 24 and Applicant would respectfully request the Examiner to reconsider and withdraw the rejection of those claims.

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[1] The inclusion of headers in the cached form responses is also explicitly recited in dependent claim 8.

In this response, Applicant has addressed the Examiner's claim rejections under 35 USC § 102(b). Accordingly, Applicant believes that this response constitutes a complete response to each of the issues raised in the office action. In light of the amendments made herein and the accompanying remarks, Applicant believes that the pending claims are in condition for allowance. Accordingly, Applicant would request the Examiner to withdraw the rejections, allow the pending claims, and advance the application to issue. If the Examiner has any questions, comments, or suggestions, the undersigned attorney would welcome and encourage a telephone conference at 512.428.9872.

Respectfully submitted,

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